

What is claimed is:

1. A method, comprising:

(1) providing a composition, said composition comprising a first component and a second component;

5 (2) applying said composition to a first workpiece;

(3) after step (2), diverting a portion of said composition;

(4) diluting said diverted composition;

(5) determining a concentration of said first component in said diluted composition; and

10 (6) introducing an additional amount of said first component into said composition if said concentration falls below a desired value.

2. The method of claim 1, further comprising, after step (2), reapplying said composition to a second workpiece.

3. The method of claim 1, wherein said first composition comprises an antimicrobial.

15 4. The method of claim 3, wherein said first workpiece comprises a raw, hide-on, carcass, cooked, prepared, processed, partially processed, ready to eat, or ready to cook food.

5. The method of claim 1, wherein:

20 step (2) comprises applying said composition to said first workpiece in a housing; and step (6) comprises introducing said additional amount of said first component into said housing for mixing with said composition if said concentration falls below said desired value.

6. The method of claim 1, further comprising:

after step (5), passing said diluted composition to a first tank; and

passing at least a portion of contents of said first tank through a separator to selectively remove at least a portion of said first component from said diluted composition.

5 7. The method of claim 6, further comprising, after step (2), passing at least a portion of said composition to said first tank.

8. A combination, comprising:

a housing;

a sprayer disposed within said housing;

0 a first tank;

a first composition disposed in said first tank, said first composition comprising a first component in a first concentration;

a first conduit extending between said first tank and said housing;

a second tank;

a second composition disposed in said second tank, said second composition comprising said first component in a second concentration, said second concentration being less than said first concentration;

a second conduit extending between said second tank and said sprayer; and

means for passing said first composition from said first tank into said housing in response to a decrease in said second concentration.

9. The combination of claim 8, further comprising a third conduit extending between said second tank and said housing.

10. The combination of claim 8 wherein said means for passing said first composition from said first tank into said housing in response to said decrease in said second concentration comprises:

means for detecting a decrease in said second concentration;

a pump operably connected to said first conduit; and

a controller operably connected to said means for detecting said decrease in said second concentration and to said pump.

11. The combination of claim 10, wherein said means for detecting said decrease in said second concentration comprises:

means for diluting said second concentration to a third concentration; and

means for detecting a change in said third concentration.

12. The combination of claim 11, wherein said means for detecting said change in said third concentration comprises a spectrophotometer.

13. A combination, comprising:

a housing;

a tank;

an antimicrobial disposed in said tank, said tank being connected to said housing for receiving said antimicrobial as said antimicrobial passes from said housing ;

a pump;

first and second filters operably connecting said tank and said pump, said first and second filters being disposed to provide for parallel flow between said tank and said pump;

means for selectively directing said antimicrobial passing from said tank to said pump

- through said first filter or said second filter; and  
a conduit extending from said pump to said housing.
14. The combination of claim 13, further comprising:  
a conveyor, said conveyor being disposed to pass workpieces through said housing; and  
5 a sprayer, said sprayer being operably connected to said conduit and at least a portion of  
said sprayer being disposed within said housing.
15. The combination of claim 14, wherein said workpieces comprise raw, hide-on, carcass,  
cooked, prepared, processed, partially processed, ready to eat, or ready to cook food.
16. A method, comprising:  
10 (1) providing a conveyor for moving a plurality of workpieces;  
(2) providing a first composition, said first composition comprising an antimicrobial and  
water;  
(3) applying said first composition to one of said plurality of workpieces;  
(4) after step (3), capturing said first composition;  
15 (5) applying said captured first composition to another of said plurality of workpieces;  
and  
(6) after step (5), selectively removing said antimicrobial from said first composition.
17. The method of 16, wherein step (6) comprises, after step (5), passing said first  
composition through a carbon filter for selectively removing said antimicrobial from said  
20 first composition.
18. The method of claim 16, wherein step (6) comprises:  
after step (5), passing said first composition to a tank; and  
when said first composition reaches a desired level in said tank, passing said first  
composition from said tank through a filter for selectively removing said antimicrobial  
5 from said first composition.
19. The method of claim 16, wherein said plurality of workpieces comprises meat, poultry,  
fish, fresh or salt water seafood, fruits, vegetables, other foodstuffs, animals, food  
packaging, or items or surfaces related to food or food processing, or combinations  
thereof.
- 0 20. The method of claim 16, further comprising:  
between step (4) and step (5), monitoring said first composition for a decrease in  
concentration of said antimicrobial in said first composition; and

introducing an additional amount of said antimicrobial into said first composition if a predetermined decrease in concentration is detected.

21. A combination, comprising:

a housing;

5 a sprayer disposed within said housing;

a conveyor, said conveyor being disposed to pass workpieces through said housing, said workpieces comprising a raw, hide-on, carcass, cooked, prepared, processed, partially processed, ready to eat, or ready to cook food;

10 a rigid member affixed to a downstream end of said housing, said rigid member having first and second portions extending on opposite sides of said conveyor and having a plurality of openings in said first portion and in said second portion;

sensors disposed within each of said openings;

a plurality of lenses secured to said rigid member to provide a water resistant seal over each said plurality of openings.

15 22. The combination of claim 21, wherein said sensors comprise:

a first sensor component disposed in one of said plurality of openings in said first portion;  
a matching second sensor component disposed in one of said plurality of openings in said second portion, said first and second sensor components being disposed and aligned so that workpieces being carried by said conveyor block a line of sight between said first and  
20 second sensor component as said workpieces pass between said first and second sensor components.

23. The combination of claim 22, wherein said sensors further comprise:

a third sensor component disposed in another of said plurality of openings in said first portion;

5 a matching fourth sensor component disposed in another of said plurality of openings in said second portion, said third and fourth sensor components being disposed and aligned so that workpieces being carried by said conveyor block a line of sight between said third and fourth sensor component as said workpieces pass between said third and fourth sensor components, said third and fourth sensor components being disposed downstream  
0 of said first and second sensor components.

24. A method, comprising:

(1) providing a conveyor for moving a plurality of workpieces, said workpieces

- comprising raw, hide-on, carcass, cooked, prepared, processed, partially processed, ready to eat, or ready to cook food;
- (2) providing a first composition, said first composition comprising a quaternary ammonium compound and water;
- 5 (3) applying said first composition to said plurality of workpieces;
- (4) simultaneously with step (3), monitoring a concentration of said quaternary ammonium compound in said first composition; and
- (5) adding an additional amount of said quaternary ammonium compound to said first composition if said concentration falls below a desired level.
- 10 25. The method of claim 24, wherein step (2) comprises providing said first composition, said first composition comprising an alkylpyridinium chloride and water.
26. The method of claim 24, wherein step (2) comprises providing said first composition, said first composition comprising a cetylpyridinium chloride and water.
27. The method of claim 24, wherein step (2) comprises providing said first composition, said  
15 first composition comprising a cetylpyridinium chloride, a solubility enhancing agent, and water.
28. The method of claim 24, wherein step (2) comprises providing said first composition, said first composition comprising a cetylpyridinium chloride, propylene glycol, and water.
29. The method of claim 24, wherein said step of monitoring said concentration of said  
20 quaternary ammonium compound in said first composition comprises:  
diverting a portion of said first composition;  
diluting said diverted composition; and  
determining a concentration of said quaternary ammonium compound in said diluted composition.
- 5 30. The method of claim 24, further comprising:  
after step (3), capturing said first composition; and  
applying said captured first composition to another of said plurality of workpieces.
31. The method of claim 24, further comprising:  
after step (3), selectively removing said quaternary ammonium compound from said first  
0 composition.